

Odor, Information and New Cosmetics—The Ripple Effect on Life by Aromachology Research

Tsuneyuki Abe

Institute of Beauty Sciences, Shiseido Co. Ltd, Tokyo, Japan

Correspondence to be sent to: Tsuneyuki Abe, Shiseido Institute of Beauty Sciences, 3-9-1 Nishi-gotanda, Shinagawa-ku, Tokyo 141-0031, Japan.
e-mail: tsuneyuki.abe@to.shiseido.co.jp

Key words: expression, face, fragrance, impression, telecommunications

Sensation and the communication of information

In the animal world, there is an almost unimaginably wide variety of modes of communication mediated by a wide range of sensory systems. Mammals, for example, have five highly developed senses. However, not all senses are equally developed. In humans, the main senses used for communication are audition and vision. It is little wonder, then, that the main modes of human communication are language and facial expression. There seems to be a close correspondence between the development of forms of communication and sensory systems and thus forms of expression and modes of perception also appear to be closely related.

The tendency in humans to depend heavily, even disproportionately, on audition and vision probably provided the basis for human activities that culminated in the last century in the crowning technological achievements of modern civilization: the telephone, radio and television. The impact of these epoch-making inventions has been further extended in this century by the rapid and wide dissemination of the Internet. Despite continuing advances in telecommunications, the main sensory modes remain visual and/or auditory because telecommunications devices are limited technologically to reproducing shapes, colors and sounds: these devices have tremendous limitations when reproducing chemical stimuli.

Olfactory effects on facial impressions

Although visual and auditory stimuli play a predominant role in human communication and perception, other sensory modalities provide important contributions to human communication. For example, the senses of touch, taste and smell can influence visual perception. Olfactory information has been demonstrated to convey important sensory information that can influence the way humans interpret information in a visual-based task such as facial perception.

Figure 1 shows the interaction between face configurations and impressions (Takano *et al.*, 1997). A strong correlation was observed

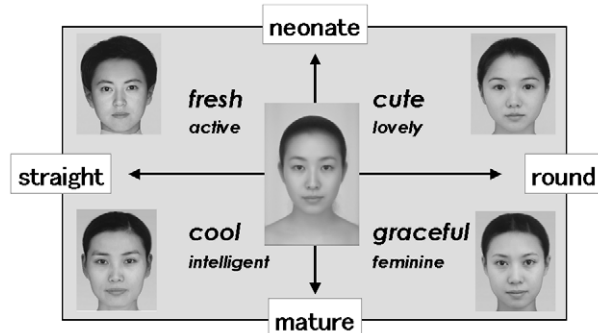


Figure 1 Interaction between face configurations and impressions (Takano *et al.*, 1997).

between facial configuration and impression in numerous experiments carried out by our research group. For example, a ‘baby face’ having round features and a ‘neonatal’ arrangement (wide forehead, short face and so on) was generally perceived as ‘cute’.

Applying the same axes used for the facial impression scaling, three women and three men rated their impressions of five facial photographs (see Figure 1). The adjectives used for the rating matrix were ‘cute’, ‘cool’, ‘fresh’ and ‘graceful’ on a five-degree rating scale (0: no impression, 4: strong impression). The procedure was carried out using two fragrances and a set of five photographs was scented with one of these fragrances. The mean impression score was plotted on the ‘cool–cute’ axis as one coordinate point and on the ‘graceful–fresh’ axis as the other coordinate point.

The results are shown in Figure 2 (Abe, 2002a) after the axes were rotated 90° counterclockwise to match the orientation in Figure 1. The subjective position of the five photographs agreed only to a limited extent with the photographs in Figure 1 (photograph No. 0 was aligned with respect to the origin of the axes and photographs Nos 1–4 were arranged so as to correspond to the quadrants in Figure 1. Due possibly to the truncation of the standard methodology, photo No. 4 fell in the third quadrant and had to be realigned to the fourth quadrant. (In the usual procedure, summation of multiple adjectives belonging to a factor was applied but in the current study only one adjective was used.) On the other hand, the subjects’ impressions of the photographs shifted toward ‘fresh’ when the photographs were scented with a ‘fresh’ fragrance (No. 53) and shifted toward a more graceful impression when scented with a ‘graceful’ fragrance (No. 509). This result indicates that olfactory

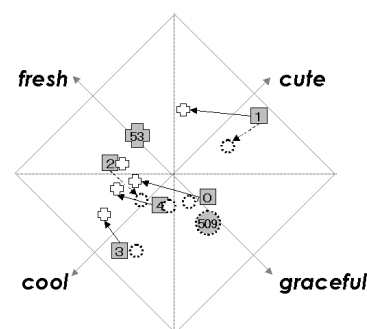


Figure 2 Effect of fragrance on the impression of facial photographs (Abe, 2002a). Mean ratings of fragrance No. 53 are shown by gray crosses and those of fragrance No. 509 by gray broken circles. The original impressions of facial photographs 0–4 are shown by gray squares. The ratings of impressions after exposure to scented photographs shifted to the corresponding white figure for each fragrance. The diamond space was constructed based on a rating continuum of from –3.0 to 3.0.

sensations can create olfactory impressions that influence the visual impression of a neutral facial photograph.

Although there is no doubt that visual and auditory stimuli play a dominant role in human communication, olfactory sensations appear to carry a unique type of information that is difficult to quantify but is nevertheless quite real. At present, both the person wearing a scent and the perceiver of that scent must occupy the same space-time in order for the olfactory experience to be held in common. This suggests that fragrances might somehow come to play an important role in the 'Internet Age' because odor is capable of adding a dimension of reality that is found only in face-to-face communication.

New fragrances: the wearer in the role of the perceiver

The fact that olfactory sensations can influence perception in other modes of sensory communication also supports the common-sense notion that fragrances can improve the wearer's self-impression. Thus, application of a 'sexy' fragrance can make the wearer feel more attractive, whereas application of other fragrances can induce a calming or restive influence. Since the earliest known accounts in the ancient world, humans have accepted this fragrance effect and have worn fragrances to improve the wearer's image. In this intended usage, the target perceiver of the fragrance is people other rather than the wearer themselves.

Recently, new types of commercially available fragrances such as Shiseido Energizing Fragrance (SEF) and Shiseido Relaxing Fragrance (SRF) are aimed specifically at creating a sense of vitality or serenity in the wearer. Figure 3 shows the subjective rating of these fragrances by 50 adult females aged 20–23 years. The questionnaire was developed by Higuchi *et al.* (2002). Scores were adjusted from 0 to 100 by summation of each factor consisting of three adjectives. Participants rated each factor from 0 ('no impression') up to 3 ('strong impression'). The 'relaxation' state was high in both of them and the 'energy' mood was felt stronger in the former [$F(1,49) = 26.24, P < 0.01$]. This suggests that the products might give full play to the abilities and imaginations of the wearers.

People can wear these fragrances solely for their own enjoyment. Of course, other people in the same space as the wearer are exposed to the scent, but the main purpose of application is to produce an

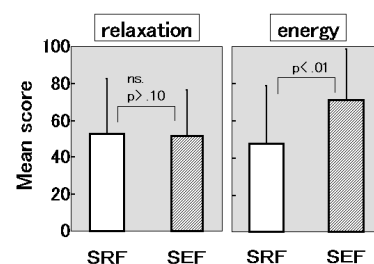


Figure 3 Feeling of two fragrances. SRF, Shiseido Relaxing Fragrance; SEF, Shiseido Energizing Fragrance. Vertical line is SD.

affect on the wearer's self-perception or state of mind. We find it quite interesting that the processing of information can be altered by fragrances. In addition, fragrances that actually improve the wearer's skin condition have now been produced (Abe, 2002b). These new trends in the development of fragrances might be the key to unlocking the potential of fragrances.

Aromachology and daily life

The fruits of aromachology seem to be the driving force behind the development of these new cosmetics and to reveal a new aspect of the power of olfaction. It is expected that through these and similar contributions aromachology will have a ripple effect on daily life.

References

- Abe, T. (2002a) *Cosmetic behavior*. In Matsui, Y. (ed.), *Interpersonal Psychology*. Brain Press, Tokyo, pp.45–58 [in Japanese].
- Abe, T. (2002b) *The Social Psychophysiology of Stress and Cosmetic Behavior*. Fragrance Journal, Tokyo [in Japanese].
- Higuchi, T., Shoji, K. and Hatayama, T. (2002) *A psychological study of sense-descriptive adjectives for characterizing fragrance*. *Jpn. J. Res. Emotions*, 8, 45–59 [in Japanese with English summary].
- Takano, R., Abe, T. and Kobayashi, N. (1997) *Relationship between facial features and perceived facial image for application to image creation using cosmetics*. Abstracts of the 70th Anniversary Conference on Colour Materials. Japan Society of Colour Material, Tokyo, pp. 188–191.